B3075-1

1984—1998

OUTLOOK FOR COMMERCIAL AIRCRAFT

Comments and questions may be addressed to Marketing Strategic Plans (18-70),
Douglas Aircraft Company, 3855 Lakewood Boulevard, Long Beach, CA 90846, U.S.A.

JUNE 1984

TABLE OF CONTENTS

PAGE

Introduction 1

Traffic Forecast Methodology 2

Economic Overview 2

Traffic 5

Capacity 9

Fleet 17

Appendices

A. Definitions 26

B. Traffic Detail 29

C. Passenger Aircraft Requirement, 1984-1998 31

7500-612 (2054

INTRODUCTION

This report, prepared by Marketing Strategic Plans, presents Douglas Aircraft Company's 1984 fifteen-year outlook of commercial air transportation for the period 1984 through 1998.

The outlook is presented in four sections devoted to traffic, capacity, and fleet. The appendices include definitions, traffic detail, and passenger aircraft requirement from 1984 to 1998.

This outlook of commercial air transportation was prepared through the analysis of 77 individual airlines comprising 80 percent of the ICAO world revenue passenger-kilometers in 1983. An additional 107 airlines were aggregated into seven regions based on the location of the airline — Europe, Africa, Middle East, United States, Canada, Latin America, and Pacific/Asia. The 77 airlines plus the seven aggregates account for 93 percent of the ICAO world revenue passenger-kilometers in 1983, and is referred to as the study group.

At this time we have not included an analysis of the air cargo industry. The advent of deregulation in the U.S. and the shift away from dedicated all-freight aircraft to the increased cargo capacity provided by the large belly pits of passenger wide-body aircraft have in the near term obstructed the availability and timelines of data required to provide a reasonable forecast for this dynamic industry. We are continuing our analysis of the air cargo industry and will publish our estimates for traffic growth and capacity requirements in a following report.

Traffic Forecast Methodology

Economic forecasts of individual countries are developed utilizing a U.S. economic forecast developed by Douglas Aircraft and the Wharton Economic Forecasting Associates World Model. This process is used for projections of 50 separate economies with an additional 40 countries forecast separately. The forecast is then utilized to develop traffic forecasts for 32 separate regions with the use of econometric analyses. The regions forecast are generally those as defined by the International Air Transport Association (IATA). All forecasts in this publication have been developed with information available as of November 1983.

Economic Overview

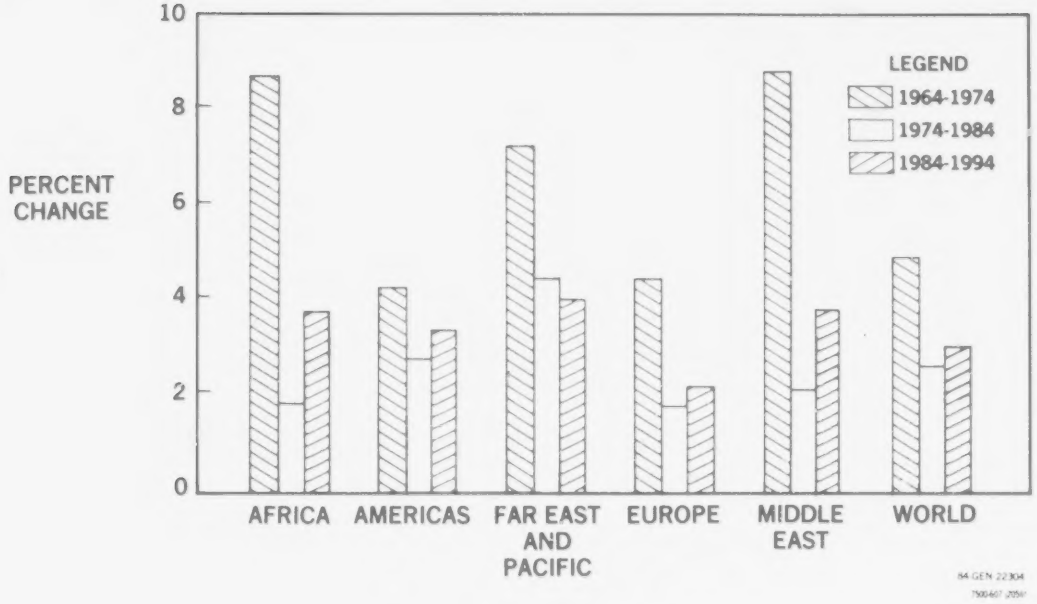
For the fourth year in a row the world economy has experienced slow and uncertain growth in 1983 — the year that a long-predicted rebound seemed to finally arrive. Each month of statistics points to the conclusion that a recovery is under way. The world economy as a whole is estimated to have grown around 1.4 percent in real terms in 1983 after a slightly negative rate in 1982. The recovery has been led by the United States in both timing and magnitude which has stimulated other developed countries into recovery. However, a significant recovery in the Middle East and Latin America is expected to lag until the middle of the decade. Asia is predicted to register the strongest advancement during the forecast period but will grow somewhat slower than the region has been accustomed to in the past. The recovery is uneven, both among countries and among the components of demand within individual economies. The United States and some of its major trading partners, Canada and the newly industrialized countries of the Pacific Basin, lead with a solid recovery in investment. Japan follows with a lag, but with uncharacteristically weak investment. Germany has displayed weakness in both exports and capital formation. There is little buoyancy in consumer spending, as real incomes grow sluggishly, suppressed by austerity programs in many countries.

Inflation is expected to improve overall compared with the performance in the 1970s. However, relative to recent performance, selected countries' inflation measures will move up slightly as recovery continues and rising capacity utilization puts upward pressure on costs. Contrary to these developments, however, high unemployment and low energy prices should induce more moderate wage settlements.

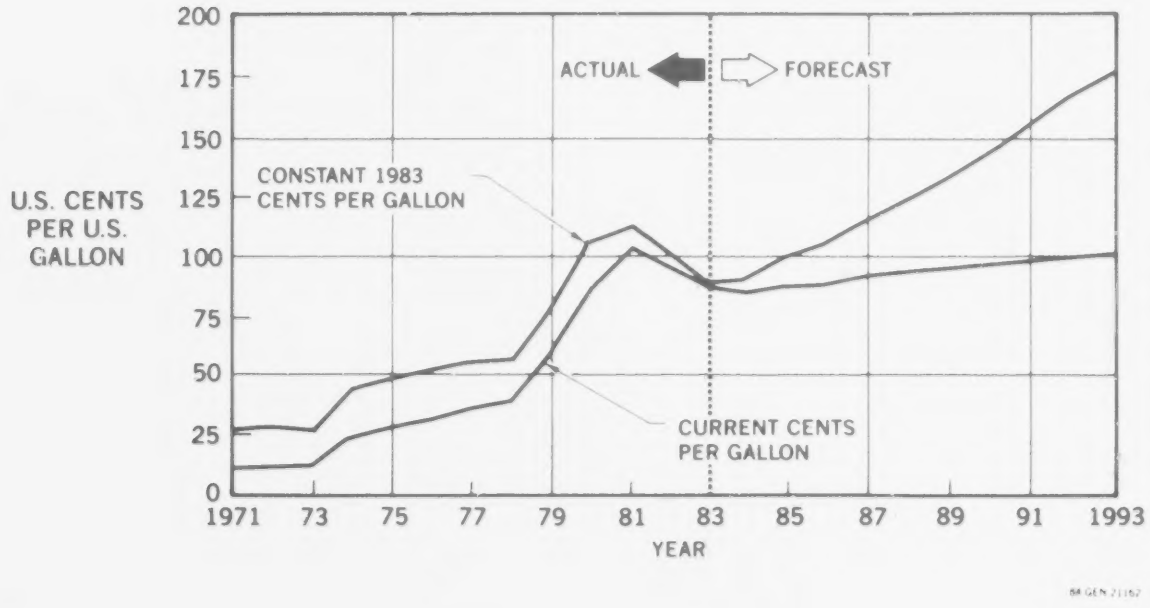
In world oil markets, the past year has been one of stability. The OPEC strategy of price reduction and production quotas has proven workable, and consumers as well as producers have experienced a period of relative peace. Major producers have experienced difficulties in adjusting to lower revenues; however, uncertainties over near-term price and output levels have been reduced. The long-term forecast for world oil prices is one of long-term stability. Real oil prices are forecast to drop through 1984, with a slight increase in real prices projected from 1985 through the end of the decade.

REGIONAL ECONOMIC OUTLOOK

LONG-TERM REAL GROSS DOMESTIC PRODUCT

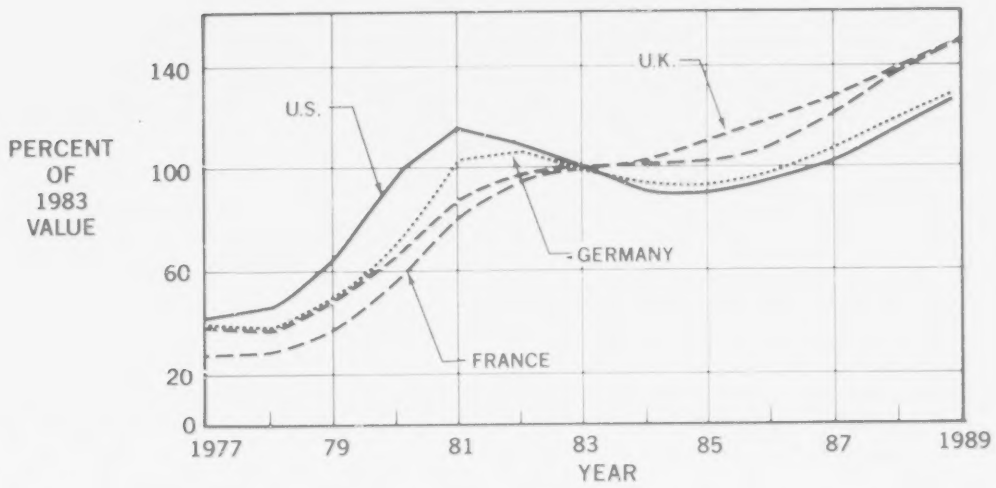


U.S. JET KEROSENE PRICES



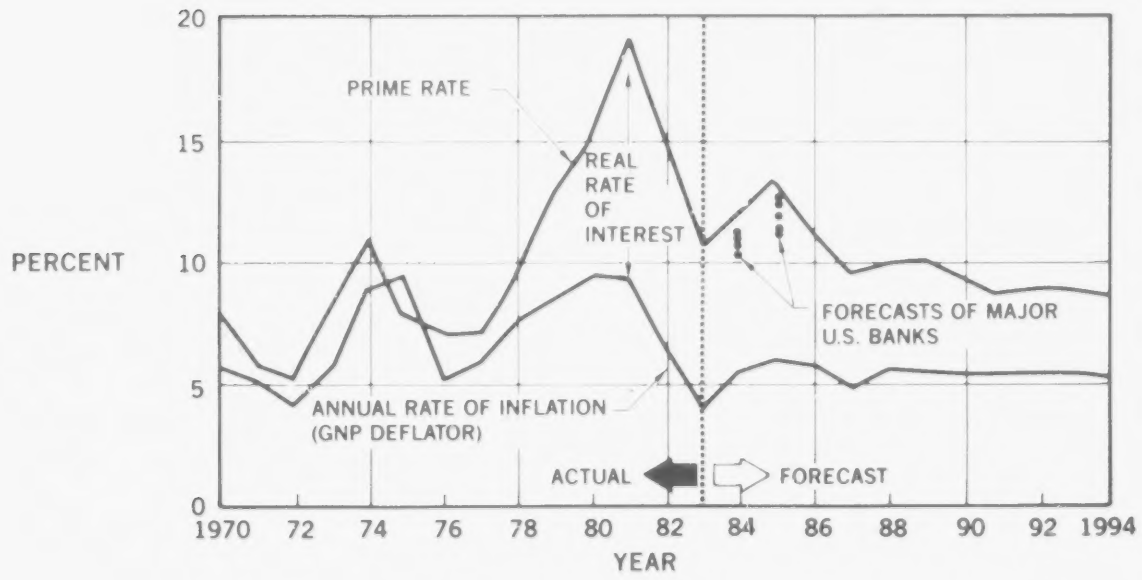
NOMINAL EUROPEAN JET KEROSENE PRICES

EXPRESSED IN CURRENT 1980 MARKS, FRANCS, DOLLARS, AND POUNDS
1983 = 100



UNITED STATES INTEREST RATES

PRIME RATE CHARGED BY BANKS

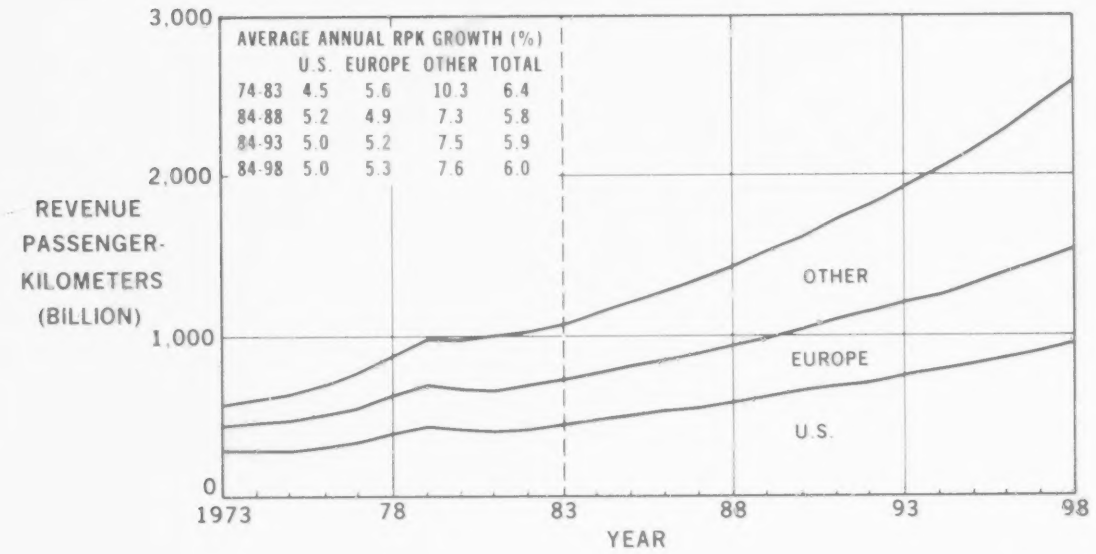


Traffic

Traffic growth for 1984 is forecast to be in the 6 percent range. This growth, along with a continuing increase in yield and increased fleet productivity, should result in a positive economic year for the airline industry.

The 184 airlines in the study group will have an average annual traffic growth rate of 6 percent over the next 15 years (1984-1998). Load factors should slowly increase, reaching the high 65-percent 1979 load factor in 1990.

PASSENGER TRAFFIC
ALL SERVICES



LOAD FACTORS

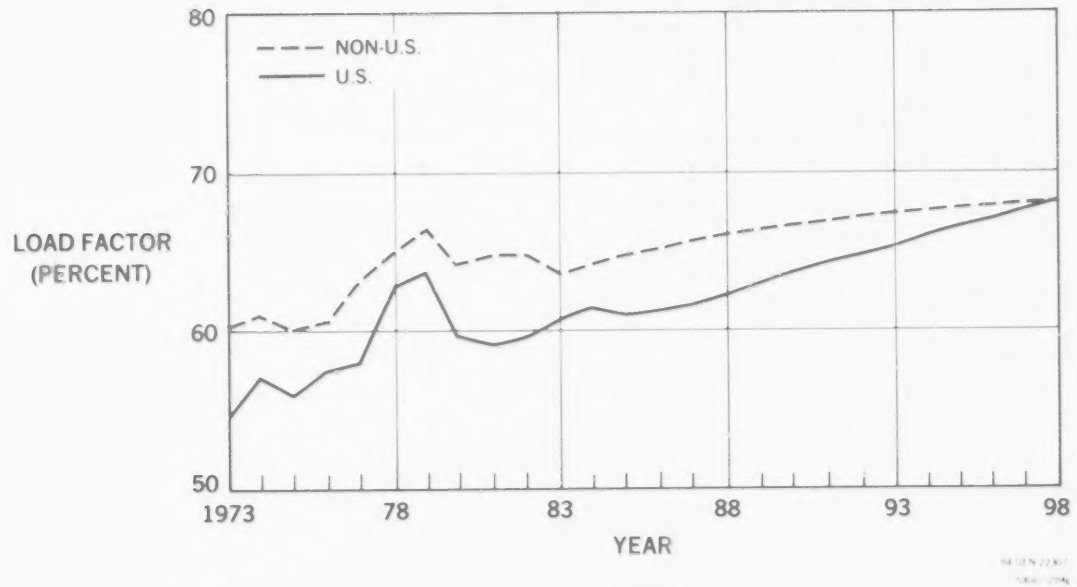
Load factors are assumed to increase through the study period to a 68 percent average which is believed to be necessary for the airlines to continue their return to financial stability. The airlines will continue to increase load factors and yields to offset rising costs. A forecast load-factor increase also accommodates probable future fare wars with resultant higher traffic. For the U.S. airlines, there is a slight load-factor decrease from 61.5 percent in 1984 to 60.9 percent in 1985, which reflects the continued competition generated by deregulation on the U.S. domestic routes, with a resulting short-term excess capacity.

U.S. REGIONAL LOAD FACTORS
(PERCENT)

	1983	1984	1985	1986
Atlantic	66.8	65.6	66.0	66.2
Domestic	59.7	60.8	60.0	60.4
Latin America	59.1	63.1	63.1	63.2
Pacific	62.1	62.0	62.6	63.1
Total	60.6	61.5	60.9	61.2

AVERAGE PASSENGER LOAD FACTORS

ALL SERVICES



Capacity

CAPACITY

The forecast capacity requirement (of available seat-kilometers) is satisfied by existing equipment (minus retirements), orders and options, projected used aircraft acquisitions, and new aircraft by generic class.

The existing equipment (minus retirements) and the orders/options provide 99.5 percent of the capacity requirements in 1984. By 1998, the 1984 fleet will satisfy less than 30 percent of the capacity requirements.

It should be noted, however, that the capacity requirements are not satisfied strictly by adding aircraft units. The productivity of the existing equipment is analyzed and projections are made for realistic productivity gains both on existing and future equipment.

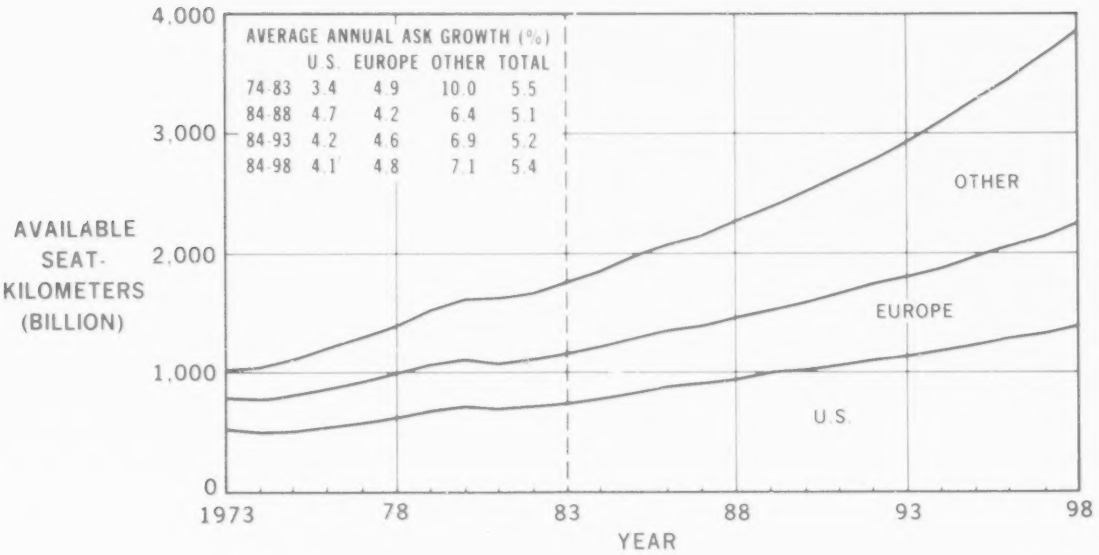
AVAILABLE SEAT-KILOMETERS CAPACITY REQUIREMENT FORECAST

With load factors increasing, the average annual ASK growth is smaller than the RPK traffic projections.

TOTAL AVERAGE ANNUAL GROWTH (PERCENT)

	RPK	Load Factor	ASK
1974-83	6.4	0.9	5.5
1984-88	5.8	0.7	5.1
1984-93	5.9	0.7	5.2
1984-98	6.0	0.6	5.4

PASSENGER CAPACITY REQUIREMENT
ALL SERVICES



RETIREMENTS

Retirements were considered on an individual airline basis for the 77 airlines analyzed in detail. The general trend was to retain the existing equipment longer than projected in previous forecasts. The lack of appropriate replacement aircraft and the necessity to acquire financial stability have contributed to this trend.

A portion of the aircraft retired was assumed to be reabsorbed into the study group airline fleets as used equipment. Equipment listed as retired is considered to be no longer in service in the study group.

RETIREMENT CONSIDERATIONS

NOISE LEGISLATION — FAR STAGE 3/ICAO ANNEX 16 CHAPTER 3

OPERATING ECONOMICS

FLIGHT CYCLES — MANY AIRCRAFT APPROACHING 60,000 TO 70,000 CYCLES

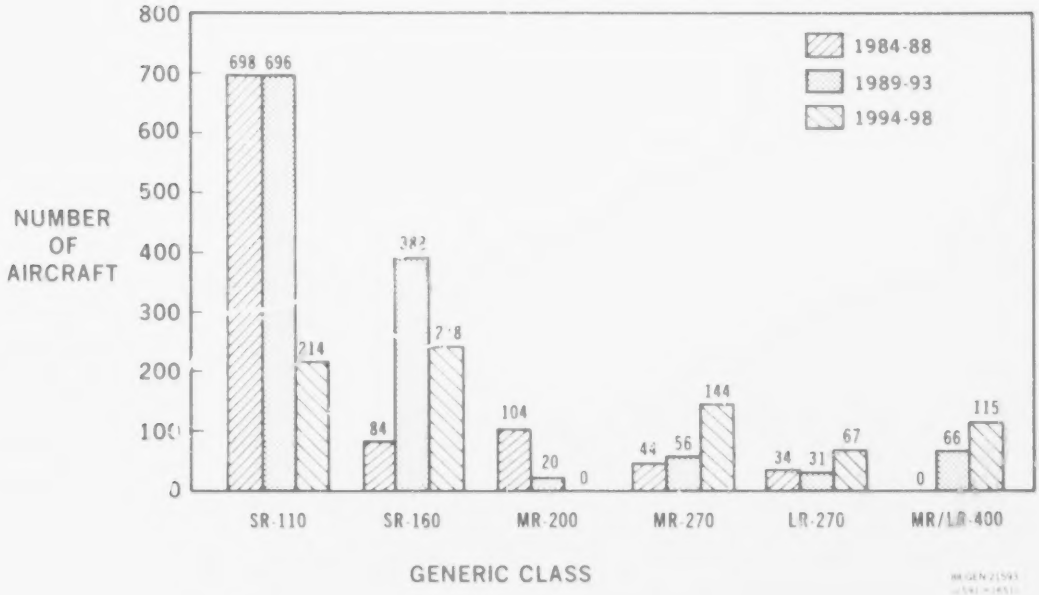
AIRFRAME AND COMPONENT LIMITS

PROHIBITIVE INSPECTION COSTS — D-CHECK

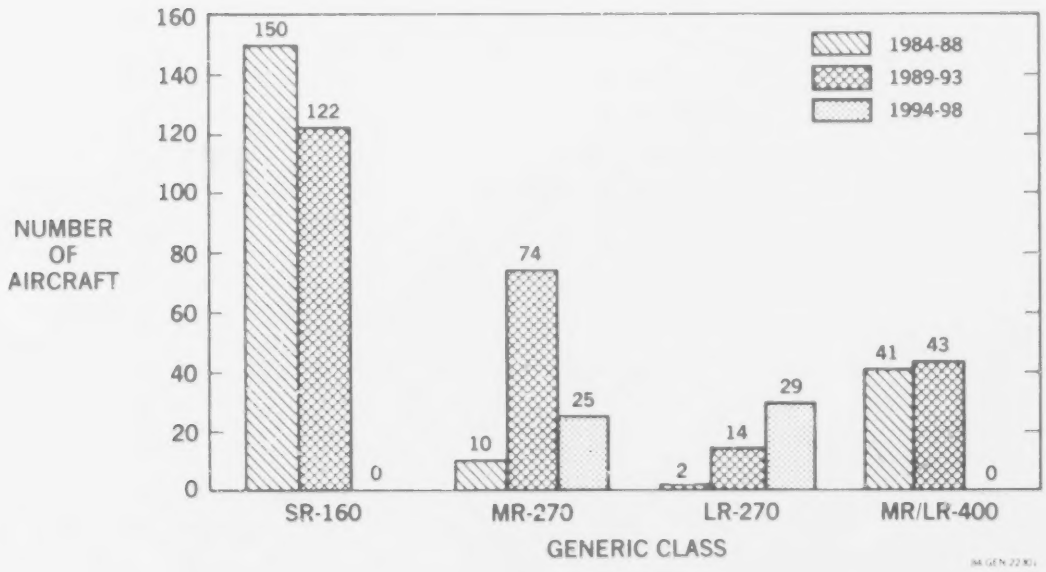
GENERAL RULE

- STANDARD BODY RETIRED AT 18 TO 23 YEARS
- WIDE-BODY RETIRED AT 20 TO 25 YEARS

PASSENGER AIRCRAFT RETIREMENTS BY GENERIC CLASS



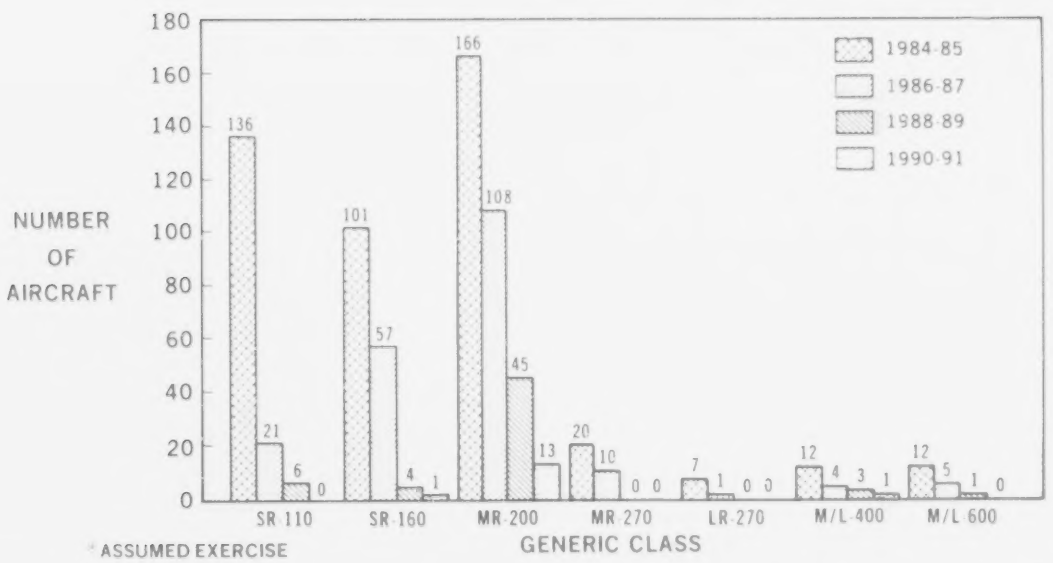
PROJECTED USED PASSENGER AIRCRAFT AVAILABILITY BY GENERIC CLASS



ORDERS AND OPTIONS

Announced firm orders and options were included on an individual airline basis using these guidelines: if the addition of new capacity had been required at known delivery dates based on traffic growth or planned retirements, firm orders were included; if the addition of new capacity at known delivery dates had resulted in excess capacity, firm orders were delayed. Options were also included under similar guidelines (except that options were assumed to be cancelled rather than delaying deliveries) if inclusion of options at known delivery dates would have resulted in excess capacity.

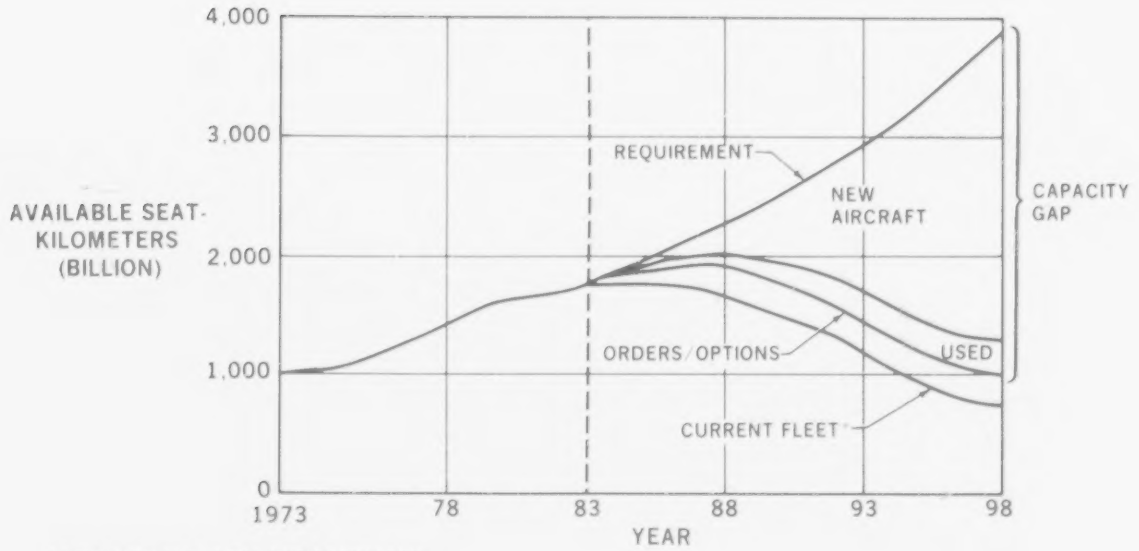
ORDERS AND OPTIONS* BY GENERIC CLASS



*ASSUMED EXERCISE

TOTAL PASSENGER AIRCRAFT CAPACITY SUPPLY FORECAST

ALL SERVICES



*1983 NON-U.S. ASKs ARE ESTIMATED

ASK GROWTH

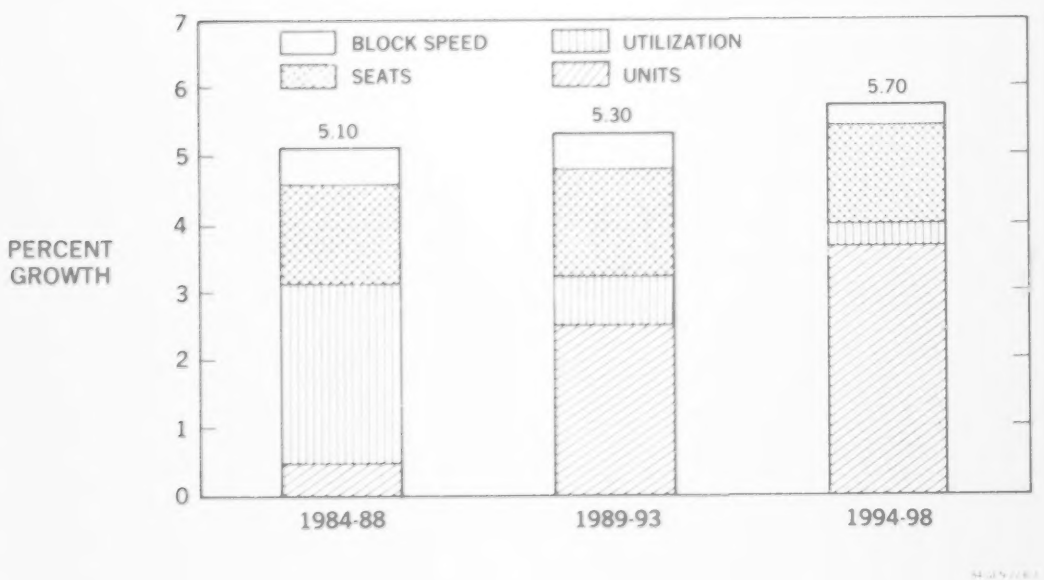
The capacity requirements in terms of available seat-kilometers are satisfied by productivity gains in utilization, seat size, and by increased aircraft units.

The block speed is also part of the productivity equation, but its slight variation is the result of assumed shifts in the airline's route structure rather than improvements in aircraft performance.

In the first 5 years of the forecast, productivity increases provide 90 percent of the capacity growth requirements. An increase in aircraft units accounts for the remaining 10 percent. Over the 15-year forecast period, utilization decreases — as a factor — as utilization levels reach projected optimums. Utilization increases provide 53 percent of the additional capacity requirements in 1984-88, 13 percent in 1989-93, and 5 percent in 1994-98. Conversely, unit growth accounts for 10 percent of the additional capacity requirements in 1984-88, 47 percent in 1989-93, and 64 percent in 1994-98.

TOTAL PASSENGER AIRCRAFT

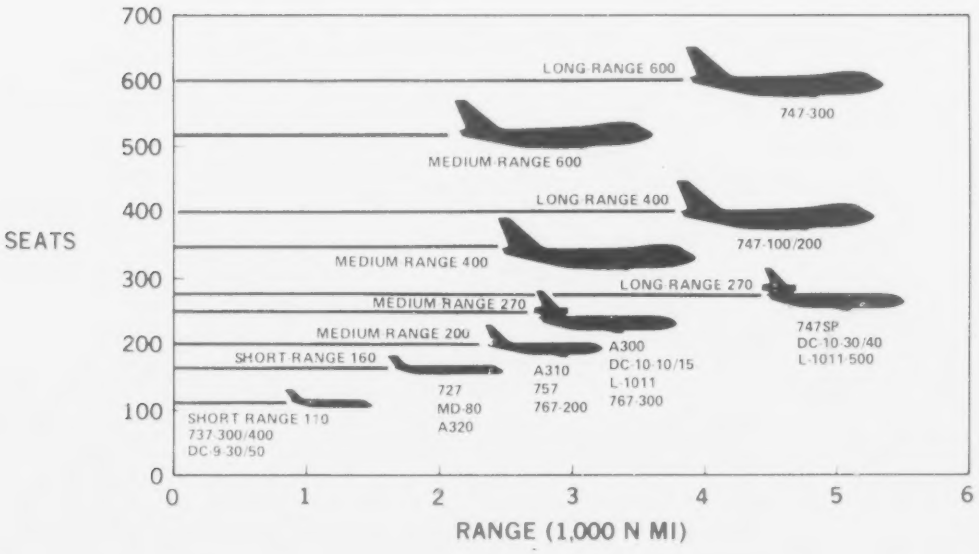
AVERAGE ANNUAL ASK GROWTH
AND
FACTORS SATISFYING THIS GROWTH



Fleet

PASSENGER AIRCRAFT

GENERIC TYPES



80GEN 21628G-1B

CAPACITY TREND

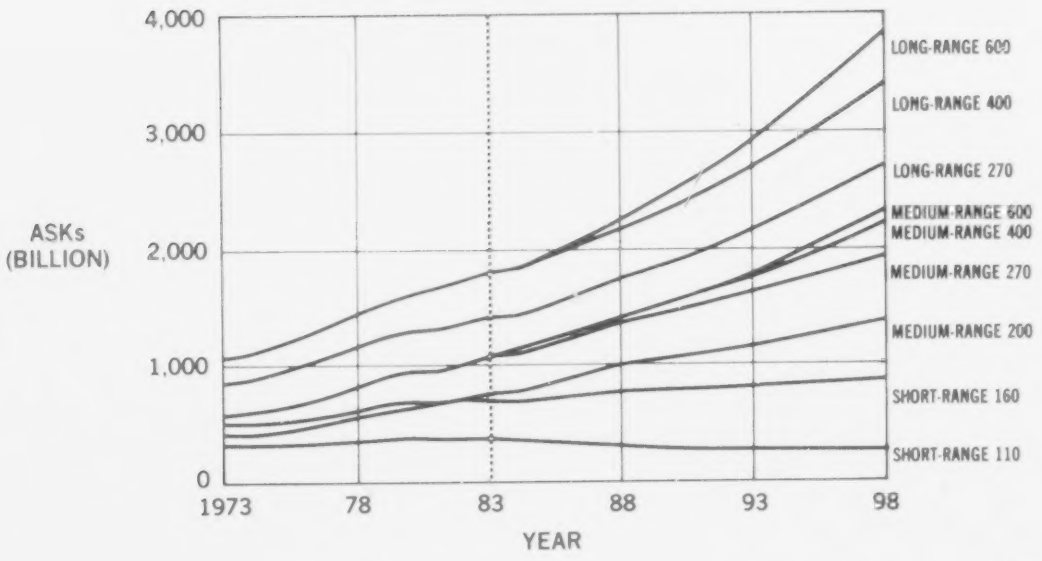
The total aircraft fleet in the study group, including existing equipment (minus retirements), orders and options, used aircraft, and new aircraft, can be categorized by generic class based on approximate aircraft size and mission requirements.

The capacity provided in available seat-kilometers by each generic class of aircraft over the 15-year forecast period shows trends toward increased capacity being provided by the short-range 160 class, the medium-range 200, 400 and 600 classes, and the long-range 600 class.

PASSENGER AIRCRAFT

CAPACITY TREND

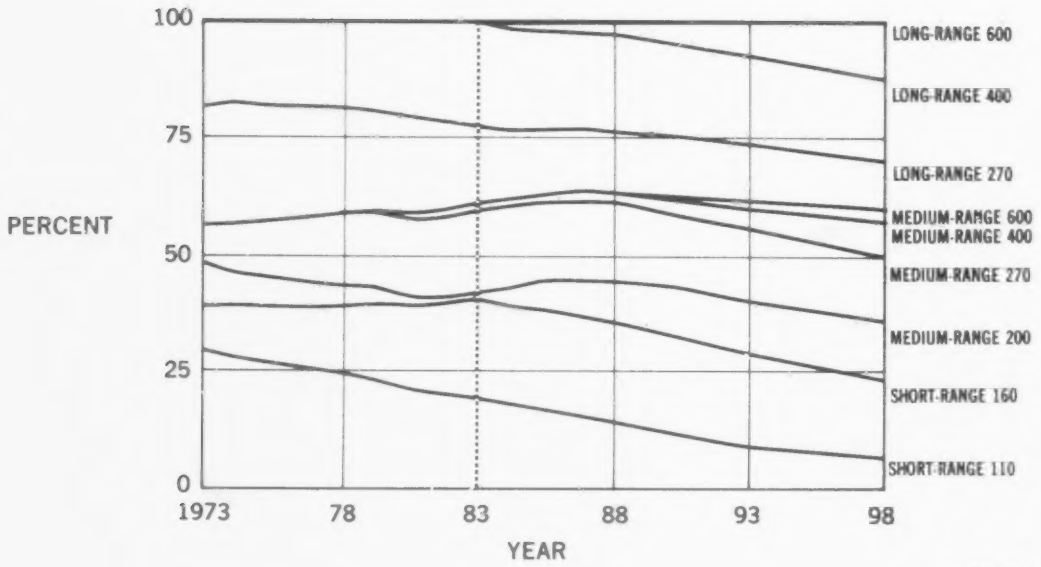
BY GENERIC CLASS



PASSENGER AIRCRAFT

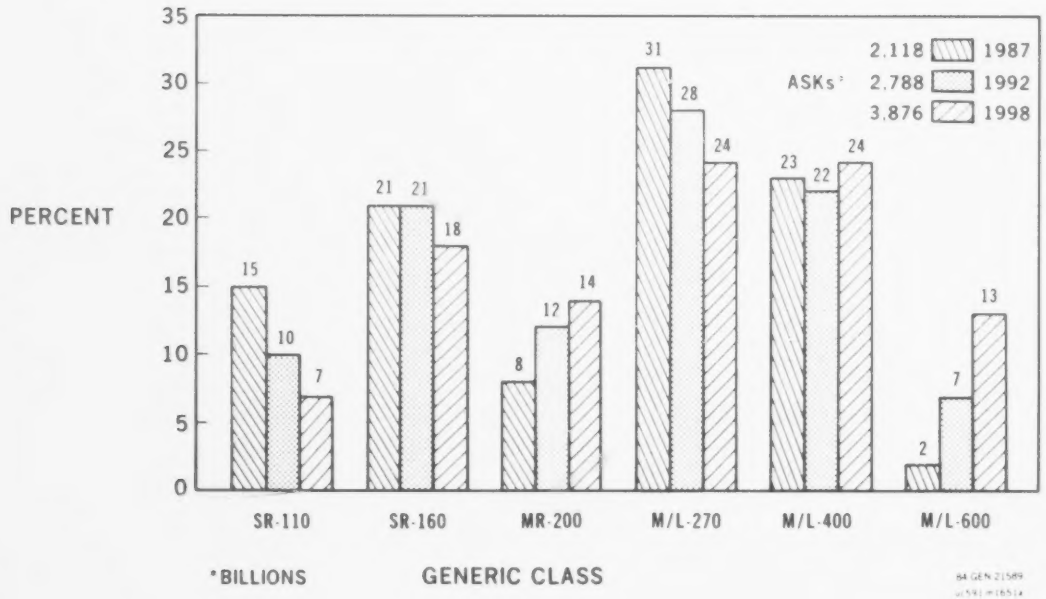
CAPACITY PERCENTAGES

BY GENERIC CLASS



84 GEN 22305

FORECAST DISTRIBUTION OF AVAILABLE SEAT-KILOMETERS BY GENERIC CLASS



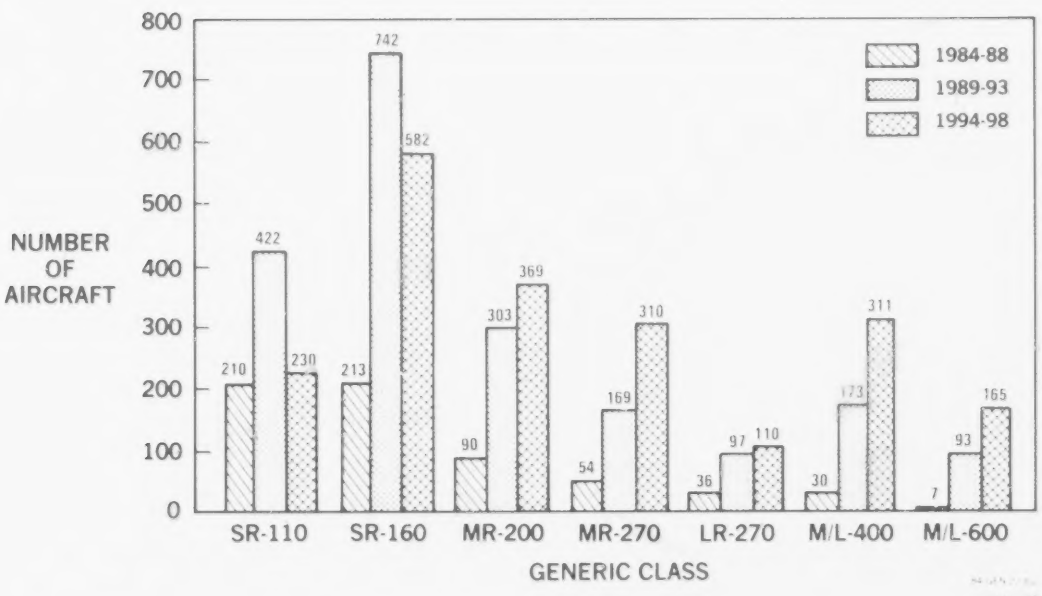
84 GEN 21589

NEW PASSENGER AIRCRAFT REQUIREMENTS

The new passenger aircraft requirements are predominantly in the smaller short-range categories during the first five forecast years because of the many retirements in the short-range 110-passenger generic class. This trend continues during the 1989-93 time period. In 1994-98, larger aircraft gain favor due, in part, to retirements in the first generation of wide-body categories as well as growing traffic.

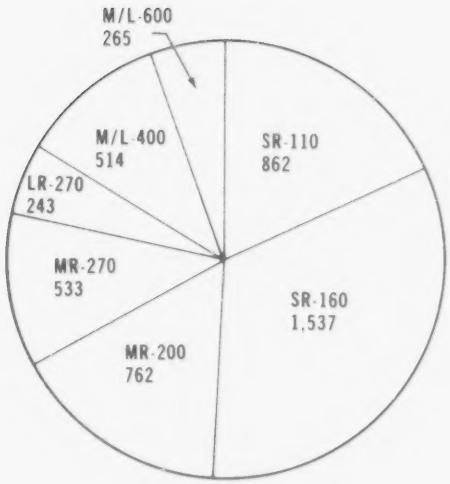
Although the smaller short-range aircraft account for 51 percent of the aircraft units during the 15-year forecast period, these units account for only 25 percent of the dollar value of equipment purchased (in constant 1984 dollars).

NEW PASSENGER AIRCRAFT REQUIREMENTS BY GENERIC CLASS

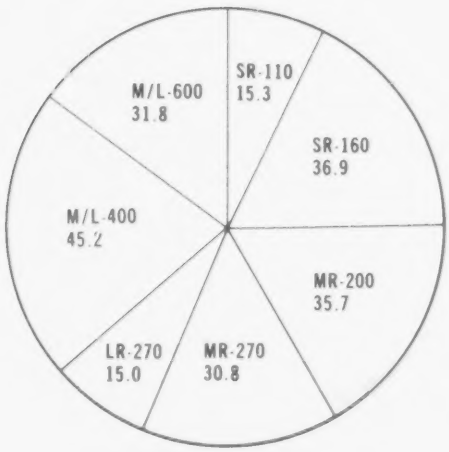


NEW PASSENGER AIRCRAFT REQUIREMENTS

1984-1998



4,716 UNITS



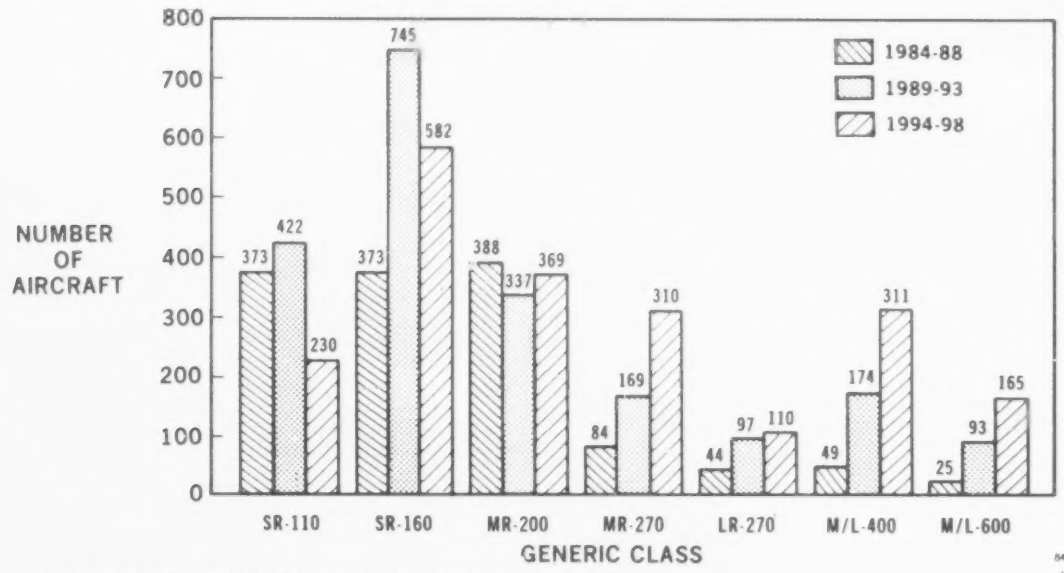
$210.7 BILLION
(CONSTANT 1984 DOLLARS)

84-GEN-21597
w591 n1651f

PASSENGER AIRCRAFT DELIVERIES

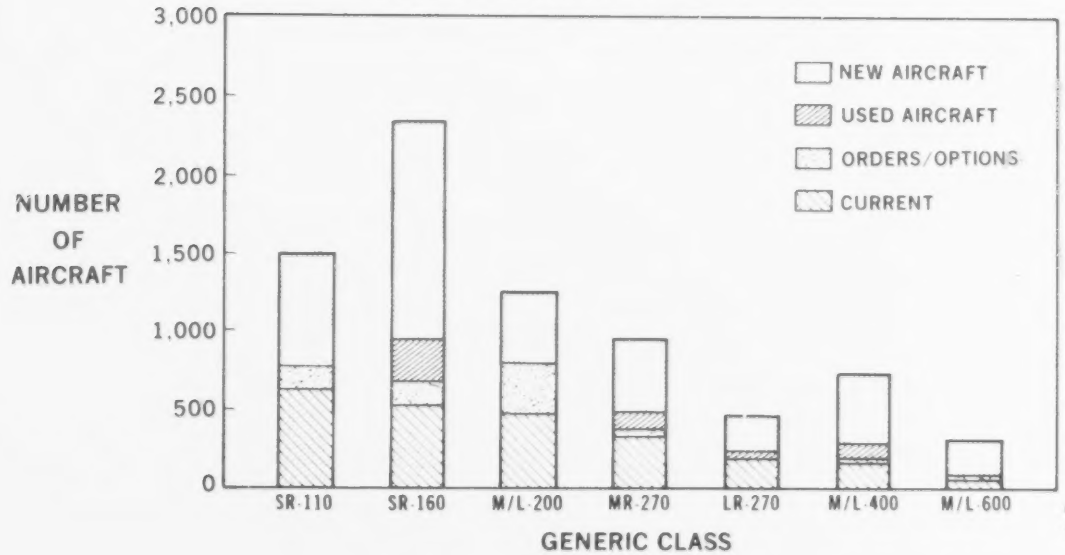
Adding firm orders and expected options to the new aircraft requirements further substantiates the trend toward the smaller short-range aircraft in the early forecast years. However, the strength of the medium-range 200 generic class becomes more apparent.

TOTAL PASSENGER AIRCRAFT DELIVERIES* BY GENERIC CLASS



*NEW AIRCRAFT PLUS ORDERS AND OPTIONS

TOTAL PASSENGER AIRCRAFT 1998 FLEET COMPOSITION BY GENERIC CLASS



Appendices

ALL-FREIGHT SERVICE — Refers to the flights performed by aircraft carrying loads other than passenger — i.e., freight and mail — and excludes all flights carrying one or more revenue passengers and flights listed in schedules as providing any passenger service.

AVAILABLE SEAT-KILOMETERS — The product obtained by multiplying the number of passenger seats available on each flight stage by the flight stage distance.

BELLY-PIT RTKs — Freight carried below the main deck (in the belly) on a passenger flight or freight on the main deck in combi operations.

CURRENT FLEET — Aircraft on hand as of December 31, 1983.

DOMICILED AREA — A geographic definition used to aggregate the total system traffic of all carriers whose home base lies within the geographic area.

GENERIC AIRCRAFT — A broad definition of seat size and range characteristics of current and future aircraft. The following lists the generic aircraft and typical annual capacity (ASKs in millions). The table lists all specific aircraft members of each passenger class.

PASSENGER TYPES

SHORT-RANGE 110 — Low seating capacity (60-135) with a range up to 1,500 nautical miles. (168)

SHORT-RANGE 150 — Seating from 136-175 with a range of 2,500 nautical miles. (282)

MEDIUM-RANGE 200 — Primarily a wide-body class with seating capacity from 176-225 and a range of 2,500 nautical miles. (418)

MEDIUM-RANGE 270 — Wide-body class seating from 226-310 with a range up to 3,500 nautical miles. (611)

LONG-RANGE 270 — A high capacity, wide-body class offering 226-310 seats with a range spanning 3,500-6,000 nautical miles. (747)

MEDIUM-RANGE 400 — Exclusively wide-body class with seating capacity from 311-470 and a range from 3,500-6,000 nautical miles. (1116)

LONG-RANGE 400 — High capacity, wide-body class with seating capacity covering 311-470 and with a range from 3,500-6,000 nautical miles. (1376)

MEDIUM-RANGE 600 — Stretched, high-capacity, wide-body class with seating capacity spanning 471-600 and with a range up to 4,500 nautical miles. (1608)

LONG-RANGE 600 — High-capacity, wide-body class with seating capacity covering 471-600 and with a range up to 6,000 nautical miles. (2006)

NONSCHEDULED SERVICE (Revenue) — Charter flights and special flights performed for remuneration on an irregular basis.

7500-612 (2054)

PRODUCTIVITY — Productivity is measured in terms of available seat-kilometers for passenger aircraft and revenue tonne-kilometers for cargo aircraft.

RETAINED (USED) AIRCRAFT — An aircraft that is sold or leased by its operating carrier to another carrier within the study group.

PERMANENTLY RETIRED — An aircraft that is either sold or leased to a carrier outside of the study group or it is assumed scrapped or grounded.

REVENUE PASSENGER-KILOMETERS — Is obtained by multiplying the number of revenue passengers carried on each flight by the flight distance.

REVENUE PASSENGER LOAD FACTOR — Revenue passenger-kilometers expressed as a percentage of available seat-kilometers.

REVENUE TONNE (METRIC TON) KILOMETERS — Is obtained by multiplying the number of revenue metric tons carried on each flight by the flight distance.

7500-612 (2054g

PASSENGER AIRCRAFT BY GENERIC CLASS

SHORT-RANGE 110

BA-146-200
BAC 1-11-200
BAC 1-11-300
BAC 1-11-400
BAC 1-11-475
BAC-1-11-500
727-100
727-100C
727-100QC
737-100
737-200
737-200C
737-200QC
737-300
CARAVELLE 10B
CARAVELLE 10R
CARAVELLE 11R
CARAVELLE 12B
CARAVELLE 3
CARAVELLE 6N
CARAVELLE 6R
DC-9-10
DC-9-10MC
DC-9-10RC
DC-9-20
DC-9-30
DC-9-30CF
DC-9-30RC
DC-9-40
DC-9-50
F-28-1000
F-28-2000
F-28-3000
F-28-4000
F-28-6000
TRIDENT 1C
TRIDENT 1E
TRIDENT 2E
TU-104
TU-134

SHORT-RANGE 160

727-200
MD-80
MERCURY
TRIDENT 3B

MEDIUM-RANGE 200

A310-100
A310-200
707-120
707-120B
707-138B
707-220
707-320
707-320B
707-320C
707-420
720
720B
757-200
767-200
COMET 4
COMET 4B
COMET 4C
CONCORDE
CV-880
CV-900A
DC-8-20
DC-8-30
DC-8-40
DC-8-50
DC-8-50CF
DC-8-62
DC-8-62CF
IL-62
SUPER VC-10
TU-154
VC-10

MEDIUM-RANGE 270

A300B1
A300B2
A300B2K
A300B4
A300B600
A300C4
747-SP
747-200CSCD
747-200SCD
DC-10-10
DC-10-10CF
DC-10-15
DC-10-30CF
DC-10-30
DC-10-40
DC-8-61
DC-8-61CF
DC-8-63
DC-8-63CF
DC-8-63PF
DC-8-71
DC-8-71CF
DC-8-73
DC-8-73CF
L-1011-1
L-1011-100
L-1011-200
L-1011-500

LONG-RANGE 270

A300B600
747-SP
747-200CSCD
747-200FSCD
747-200SCD
DC-10-30
DC-10-30CF
DC-10-30ER
DC-10-40
DC-8-63
DC-8-63CF
DC-8-63PF
DC-8-73
DC-8-73CF
IL-86
L-1011-500

MEDIUM-RANGE 400

747-100
747-100RF
747-100SR
747-200C
747-200

LONG-RANGE 400

747-100
747-100RF
747-200
747-200C
747-200R

MEDIUM-RANGE 600

747-300
747-300C

LONG-RANGE 600

747-300
747-300C

TOTAL

PASSENGER TRAFFIC — HISTORY AND FORECAST
TOTAL REPORT (RPKs AND ASKs IN BILLIONS)

	SCHEDULED SERVICE					NONSCHEDULED SERVICE					ALL SERVICES				
YEAR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR
1971	386.8	0.0	764.2	0.0	50.6	55.3	0.0	74.3	0.0	74.4	442.2	0.0	838.5	0.0	52.7
1972	447.6	15.7	827.2	8.2	54.1	64.0	15.7	84.3	13.3	76.0	511.7	15.7	911.5	8.7	56.1
1973	513.5	14.7	929.8	12.4	55.2	74.6	16.5	98.5	16.8	75.7	588.2	14.9	1,028.3	12.8	57.2
1974	541.7	5.4	954.3	2.6	56.7	83.6	12.1	104.1	5.6	80.3	625.4	6.3	1,058.5	2.9	59.0
1975	568.9	5.0	1,013.2	6.1	56.1	89.8	7.4	121.6*	16.8	73.8	658.8	5.3	1,134.9*	7.2	58.0
1976	627.0	10.2	1,091.6	7.7	57.4	94.8	5.5	130.0*	6.8	72.9	721.9	9.5	1,221.7*	7.6	59.0
1977	688.5	9.8	1,173.5	7.5	58.6	104.8*	10.5	132.6	2.0	79.0	793.3*	9.9	1,306.2	6.9	60.7
1978	791.3*	14.9	1,269.4*	8.1	62.3	108.0*	3.0	135.3*	2.0	79.8	899.3*	13.3	1,404.8*	7.5	64.0
1979	894.2*	13.0	1,402.9*	10.5	63.7	104.0*	−3.7	128.7*	−4.9	80.7	998.2*	10.9	1,531.6*	9.0	65.1
1980	911.0*	1.8	1,496.0*	6.6	60.9	92.8*	−10.7	117.8*	−8.4	78.7	1,003.8*	0.5	1,613.9*	5.3	62.2
1981	928.0*	1.8	1,516.7	1.3	61.1	89.9*	−3.1	114.5*	−2.7	78.4	1,017.9*	1.4	1,631.3*	1.0	62.4
1982	954.0*	2.8	1,555.8	2.5	61.3	96.5*	7.3	124.1*	8.3	77.7	1,050.5*	3.2	1,679.9*	2.9	62.5
1983	996.7*	4.4	1,630.6	4.8	61.1	100.4*	4.0	129.0*	3.9	77.8	1,097.1*	4.4	1,759.6*	4.7	62.3
1984	1,060.5	6.4	1,703.5	4.4	62.2	104.9	4.4	146.9	13.8	71.4	1,165.5	6.2	1,850.4	5.1	62.9
1985	1,122.7	5.8	1,800.6	5.7	62.3	109.7	4.5	153.1	4.2	71.6	1,232.4	5.7	1,953.8	5.5	63.0
1986	1,193.8	6.3	1,901.6	5.6	62.7	114.7	4.5	159.7	4.3	71.8	1,308.5	6.1	2,061.3	5.5	63.4
1987	1,748.6	4.5	1,974.1	3.8	63.2	120.0	4.6	166.6	4.3	72.0	1,368.7	4.5	2,140.8	3.8	63.9
1988	1,331.8	6.6	2,086.9	5.7	63.8	125.6	4.6	173.9	4.3	72.2	1,457.4	6.4	2,260.8	5.6	64.4
1989	1,414.3	6.2	2,199.7	5.4	64.3	131.4	4.6	181.8	4.5	72.3	1,545.8	6.0	2,381.5	5.3	64.9
1990	1,502.6	6.2	2,316.9	5.3	64.8	137.3	4.4	189.4	4.2	72.4	1,640.0	6.0	2,506.3	5.2	65.4
1991	1,594.6	6.1	2,440.9	5.3	65.3	143.4	4.4	197.3	4.1	72.7	1,738.1	5.9	2,638.2	5.2	65.8
1992	1,692.7	6.1	2,576.1	5.5	65.7	149.8	4.4	205.5	4.1	72.9	1,842.6	6.0	2,781.7	5.4	66.2
1993	1,797.5	6.1	2,719.7	5.5	66.0	156.6	4.4	214.5	4.3	73.0	1,954.1	6.0	2,934.2	5.4	66.6
1994	1,909.4	6.2	2,873.2	5.6	66.4	163.6	4.5	223.8	4.3	73.1	2,073.1	6.0	3,097.1	5.5	66.9
1995	2,030.1	6.3	3,039.9	5.8	66.7	171.0	4.5	233.7	4.4	73.1	2,201.2	6.1	3,273.7	5.7	67.2
1996	2,159.1	6.3	3,219.9	5.9	67.0	178.8	4.5	244.2	4.4	73.2	2,337.9	6.2	3,464.2	5.8	67.4
1997	2,297.0	6.3	3,409.5	5.8	67.3	186.9	4.5	255.4	4.5	73.2	2,484.0	6.2	3,664.9	5.7	67.7
1998	2,444.4	6.4	3,612.4	5.9	67.6	195.6	4.6	266.8	4.4	73.3	2,640.1	6.2	3,879.3	5.8	68.0

*ESTIMATED VALUE — ACTUAL NOT AVAILABLE

7500-608 J2054e

TOTAL U.S.

PASSENGER TRAFFIC — HISTORY AND FORECAST
TOTAL REPORT (RPKs AND ASKs IN BILLIONS)

	SCHEDULED SERVICE					NONSCHEDULED SERVICE					ALL SERVICES				
YEAR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR
1971	217.6	0.0	446.6	0.0	48.7	27.4	0.0	32.1	0.0	85.4	245.1	0.0	478.7	0.0	51.2
1972	246.4	13.2	463.3	3.7	53.1	26.6	−2.8	31.0	−3.3	85.6	273.1	11.4	494.4	3.2	55.2
1973	264.5	7.3	505.8	9.1	52.3	30.6	14.7	35.8	15.2	85.5	295.2	8.0	541.6	9.5	54.5
1974	266.9	0.8	484.5	−4.2	55.0	29.0	−5.0	33.6	−5.9	86.3	296.0	0.2	518.2	−4.3	57.1
1975	267.5	0.2	494.4	2.0	54.1	25.7	−11.5	30.9	−8.2	83.2	293.2	−0.9	525.3	1.3	55.8
1976	293.8	9.8	527.1	6.6	55.7	29.1	13.2	34.9	13.0	83.3	323.0	10.1	562.0	6.9	57.4
1977	317.7	8.1	565.1	7.2	56.2	31.7	8.8	37.3	6.8	84.8	349.4	8.1	602.5	7.2	57.9
1978	372.0	17.1	604.6	6.9	61.5	29.1	−7.9	34.3	−8.0	84.9	401.2	14.8	639.0	6.0	62.7
1979	420.4	13.0	668.5	10.5	62.8	23.5	−19.4	27.6	−19.5	85.1	443.9	10.6	696.1	8.9	63.7
1980	409.7	−2.5	694.1	3.8	59.0	17.1	−26.9	21.5	−21.8	79.5	426.9	−3.8	715.7	2.8	59.6
1981	399.1	−2.5	680.7	−1.9	58.6	13.6	−20.5	17.0	−21.2	80.3	412.7	−3.3	697.7	−2.5	59.1
1982	414.3	3.8	701.4	3.0	59.0	12.4	−8.6	15.6	−8.1	79.8	426.8	3.4	717.0	2.7	59.5
1983	447.2	7.9	743.3	5.9	60.1	12.9	3.8	16.3	4.8	79.0	460.2	7.8	759.7	5.9	60.5
1984	476.6	6.5	777.6	4.6	61.2	13.4	4.2	19.3	17.8	69.9	490.1	6.5	796.9	4.8	61.5
1985	501.2	5.1	826.4	6.2	60.6	14.0	3.7	20.0	3.9	69.8	515.2	5.1	846.5	6.2	60.8
1986	530.0	5.7	868.4	5.0	61.0	14.4	3.4	20.7	3.5	69.7	544.5	5.6	889.1	5.0	61.2
1987	548.3	3.4	892.5	2.7	61.4	14.9	3.2	21.5	3.5	69.6	563.3	3.4	914.0	2.8	61.6
1988	578.6	5.5	932.5	4.4	62.0	15.4	3.3	22.0	2.7	70.0	594.1	5.4	954.5	4.4	62.2
1989	607.5	4.9	968.3	3.8	62.7	15.9	3.3	22.6	2.6	70.4	623.5	4.9	991.0	3.8	62.9
1990	638.1	5.0	1,005.1	3.8	63.4	16.5	3.3	23.2	2.6	70.9	654.6	4.9	1,028.4	3.7	63.6
1991	668.1	4.7	1,042.6	3.7	64.0	17.0	3.3	24.0	3.0	71.1	685.2	4.6	1,066.6	3.7	64.2
1992	699.6	4.7	1,082.6	3.8	64.6	17.6	3.4	24.7	3.2	71.2	717.2	4.6	1,107.4	3.8	64.7
1993	732.7	4.7	1,123.4	3.7	65.2	18.2	3.4	25.5	2.9	71.5	751.0	4.6	1,148.9	3.7	65.3
1994	767.4	4.7	1,165.3	3.7	65.8	18.8	3.4	26.0	2.1	72.4	786.3	4.7	1,191.4	3.6	66.0
1995	805.0	4.9	1,213.6	4.1	66.3	19.5	3.4	26.9	3.3	72.5	824.6	4.8	1,240.6	4.1	66.4
1996	844.5	4.9	1,263.2	4.0	66.8	20.2	3.4	27.6	2.7	73.0	864.7	4.8	1,290.9	4.0	66.9
1997	886.0	4.9	1,315.1	4.1	67.3	20.9	3.4	28.5	3.2	73.1	906.9	4.8	1,343.7	4.0	67.4
1998	929.5	4.9	1,367.9	4.0	67.9	21.6	3.4	29.3	2.7	73.7	951.2	4.8	1,397.2	3.9	68.0

7500-608 J2054b

TOTAL NON-U.S.

PASSENGER TRAFFIC — HISTORY AND FORECAST
TOTAL REPORT (RPKs AND ASKs IN BILLIONS)

	SCHEDULED SERVICE					NONSCHEDULED SERVICE					ALL SERVICES				
YEAR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR	RPKs (BILLIONS)	ANNUAL GROWTH RATE (RPKs)	ASKs (BILLIONS)	ANNUAL GROWTH RATE (ASKs)	LOAD FACTOR
1971	169.2	0.0	317.5	0.0	53.2	27.9	0.0	42.2	0.0	66.0	197.1	0.0	359.8	0.0	54.7
1972	201.2	18.9	363.8	14.5	55.3	37.3	34.0	53.2	26.0	70.2	238.6	21.0	417.0	15.9	57.2
1973	249.0	23.7	423.9	16.5	58.7	44.0	17.7	62.7	17.7	70.2	293.0	22.8	486.6	16.6	60.2
1974	274.8	10.3	469.8	10.8	58.4	54.5	24.0	70.4	12.3	77.5	329.4	12.4	540.2	11.0	60.9
1975	301.4	9.6	518.7	10.4	58.1	64.1	17.5	90.7*	28.8	70.7	365.6	10.9	609.5*	12.8	59.9
1976	333.1	10.5	564.4	8.8	59.0	65.7	2.4	95.1*	4.8	69.1	398.9	9.1	659.6*	8.2	60.4
1977	370.8	11.3	608.3	7.7	60.9	73.1*	11.2	95.3	0.2	76.7	443.9*	11.3	703.6	6.6	63.0
1978	419.2*	13.0	664.8*	9.2	63.0	78.8*	7.8	101.0*	5.9	78.0	498.1*	12.2	765.8*	8.8	65.0
1979	473.7*	12.9	734.3*	10.4	64.5	80.4*	2.0	101.1*	0.0	79.6	554.2*	11.2	835.5*	9.0	66.3
1980	501.2*	5.8	801.9*	9.2	62.5	75.6*	-6.0	96.2*	-4.7	78.5	576.9*	4.0	898.2*	7.5	64.2
1981	528.8*	5.5	836.0*	4.2	63.2	76.2*	0.8	97.5*	1.3	78.1	605.1*	4.8	933.6*	3.9	64.8
1982	539.6*	2.0	854.4*	2.2	63.1	84.0*	10.2	108.4*	11.1	77.4	623.6*	3.0	962.9*	3.1	64.7
1983	549.4*	1.8	887.2*	3.8	61.9	87.5*	4.1	112.6*	3.8	77.6	636.9*	2.1	999.9*	3.8	63.7
1984	583.9	6.2	925.9	4.3	63.0	91.4	4.5	127.6	13.2	71.6	675.4	6.0	1.053.5	5.3	64.1
1985	621.4	6.4	974.2	5.2	63.7	95.7	4.6	133.0	4.2	71.9	717.1	6.1	1.107.2	5.1	64.7
1986	663.8	6.8	1.033.2	6.0	64.2	100.2	4.7	138.9	4.4	72.1	764.0	6.5	1.172.2	5.8	65.1
1987	700.2	5.4	1.081.6	4.6	64.7	105.0	4.8	145.1	4.4	72.4	805.3	5.4	1.226.7	4.6	65.6
1988	753.1	7.5	1.154.4	6.7	65.2	110.1	4.8	151.8	4.5	72.5	863.2	7.1	1.306.2	6.4	66.0
1989	806.8	7.1	1.231.3	6.6	65.5	115.5	4.8	159.1	4.8	72.5	922.3	6.8	1.390.4	6.4	66.3
1990	864.5	7.1	1.311.7	6.5	65.9	120.8	4.6	166.1	4.4	72.7	985.3	6.8	1.477.9	6.2	66.6
1991	925.4	7.1	1.398.3	6.6	66.2	126.3	4.6	173.3	4.3	72.9	1.052.8	6.8	1.571.6	6.3	66.9
1992	993.1	7.1	1.493.4	6.8	66.5	132.2	4.6	180.7	4.2	73.1	1.125.3	6.8	1.674.2	6.5	67.2
1993	1.064.8	7.2	1.596.2	6.8	66.7	138.3	4.6	188.9	4.5	73.2	1.203.1	6.9	1.785.2	6.6	67.4
1994	1.142.0	7.2	1.707.9	6.9	66.8	144.7	4.6	197.8	4.6	73.2	1.286.8	6.9	1.905.7	6.7	67.5
1995	1.225.0	7.2	1.826.2	6.9	67.0	151.5	4.6	206.8	4.5	73.2	1.376.6	6.9	2.033.1	6.6	67.7
1996	1.314.6	7.3	1.956.6	7.1	67.1	158.6	4.6	216.6	4.7	73.2	1.473.2	7.0	2.173.2	6.8	67.7
1997	1.411.0	7.3	2.094.3	7.0	67.3	166.0	4.6	226.8	4.7	73.2	1.577.1	7.0	2.321.7	6.8	67.9
1998	1.514.9	7.3	2.244.5	7.1	67.4	173.9	4.7	237.5	4.7	73.2	1.688.8	7.0	2.482.0	6.9	68.0

*ESTIMATED VALUE — ACTUAL NOT AVAILABLE

7500-605 (2054)

TOTAL WORLD
PASSENGER JET AIRCRAFT REQUIREMENT BY GENERIC CLASS

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	TOTAL
SHORT RANGE 110																	
PERMANENTLY RETIRED		(80)	(128)	(158)	(143)	(189)	(173)	(150)	(141)	(139)	(93)	(69)	(67)	(49)	(18)	(11)	(1,608)
ORDERS		75	48	12	8	6											149
OPTIONS		10	3	1													14
GENERIC AIRCRAFT		10	17	36	53	94	97	87	77	85	76	60	55	49	39	27	862
END-OF-YEAR TOTAL	2,136	2,151	2,091	1,982	1,900	1,811	1,735	1,672	1,608	1,554	1,537	1,528	1,516	1,516	1,537	1,553	
SHORT RANGE 160																	
PERMANENTLY RETIRED		(14)	(5)	(4)	(22)	(39)	(80)	(60)	(68)	(75)	(105)	(87)	(54)	(48)	(23)	(26)	(710)
ORDERS		48	53	38	19												158
OPTIONS						2	2	1									5
GENERIC AIRCRAFT		4	15	44	62	88	170	159	145	120	148	140	141	110	95	96	1,537
END-OF-YEAR TOTAL	1,355	1,393	1,456	1,534	1,593	1,644	1,736	1,836	1,913	1,958	1,992	2,054	2,141	2,203	2,275	2,345	
MEDIUM RANGE 200																	
PERMANENTLY RETIRED		(41)	(28)	(16)	(7)	(12)	(9)	(3)	(8)								(124)
ORDERS		73	71	64	19	12	5	5									249
OPTIONS		4	18	13	12	12	16	5	3								83
GENERIC AIRCRAFT		17	2	12	11	48	56	50	59	78	60	71	77	70	81	70	762
END-OF-YEAR TOTAL	300	353	416	489	524	584	652	709	763	841	901	972	1,049	1,119	1,200	1,270	
MEDIUM RANGE 270																	
PERMANENTLY RETIRED		(11)	(11)	(12)		(10)		(4)		(23)	29	(37)	(55)	(23)	(13)	(16)	(244)
ORDERS		15	2	7	3												27
OPTIONS		2	1														3
GENERIC AIRCRAFT		1	13	11	17	12	18	26	40	33	52	50	86	73	52	49	533
END-OF-YEAR TOTAL	608	615	620	626	646	648	666	688	728	738	761	774	805	855	894	927	
LONG RANGE 270																	
PERMANENTLY RETIRED			(15)	(13)	(3)	(3)			(7)	(10)	(14)	(11)	(20)	(12)	(8)	(16)	(132)
ORDERS		2	1														3
OPTIONS		2	2	1													5
GENERIC AIRCRAFT		1	8	10	10	7	11	12	23	25	26	21	31	15	17	26	243
END-OF-YEAR TOTAL	344	349	345	343	350	354	365	377	393	408	420	430	441	444	453	463	
MEDIUM/LONG RANGE 400																	
PERMANENTLY RETIRED									(10)	(15)	(41)	(34)	(23)	(25)	(16)	(17)	(181)
ORDERS		9															9
OPTIONS			3	2	2	3		1									11
GENERIC AIRCRAFT				10	5	15	20	16	30	40	67	66	66	71	54	54	514
END-OF-YEAR TOTAL	368	377	380	392	399	417	437	454	474	499	525	557	600	646	684	721	
MEDIUM/LONG RANGE 600																	
PERMANENTLY RETIRED																	(0)
ORDERS		6	6	4	1	1											18
OPTIONS																	0
GENERIC AIRCRAFT					1	6	13	17	19	22	22	27	30	33	39	36	265
END-OF-YEAR TOTAL	15	21	27	31	33	40	53	70	89	111	133	160	190	223	262	298	
TOTAL																	
PERMANENTLY RETIRED		(146)	(187)	(203)	(175)	(253)	(262)	(217)	(234)	(262)	(282)	(238)	(219)	(157)	(78)	(86)	(2,999)
ORDERS		228	181	125	50	19	5	5									613
OPTIONS		18	27	17	14	17	18	7	3								121
GENERIC AIRCRAFT		33	55	123	159	270	385	367	393	403	451	435	486	421	377	358	4,716
END-OF-YEAR TOTAL	5,126	5,259	5,335	5,397	5,445	5,498	5,644	5,806	5,968	6,109	6,278	7,475	6,742	7,006	7,305	7,577	

7500-606 j2054a

REPORT NO. C1-M21-7755
JULY 1984

DOUGLAS AIRCRAFT COMPANY

3855 Lakewood Boulevard, Long Beach, California 90846 (213) 593 5511

MCDONNELL DOUGLAS CORPORATION

PRINTED IN U.S.A. 7/84 S-1473